

Application No. 10/705,482
Amdt. Dated 12/09/2004
Reply to Office Action of 02/04/2005

Remarks

The applicant has carefully considered the new grounds of rejection and the new references cited in the Office Action, and wishes to maintain the claims as previously amended in the Amendment filed September 29, 2004. Reconsideration of the rejection of Claims 1 and 3 - 7 is respectfully requested in view of the following remarks.

The Examiner has noted that the application names joint inventors. The claims that are currently presented in the application were commonly owned at the time that the inventions covered therein were made.

Summary of applicants' process

The applicants have disclosed a new and unobvious process for coating and inspecting drawn metal parts that is suitable for high speed production of battery cans. As noted in the specification, the identification of the parts with respect to the press they were produced on is maintained throughout the overall production process until they are finally packed in cartons identifying the source of the parts. This is accomplished by providing a single ordered stream of parts with a repeating sequential order, such as 1, 2, 3, 4, 1, 2, 3, 4, 1, 2, 3, 4--- identifying the source of the articles as coming from tools 1, 2, 3, 4. The integrity of the identification process is maintained during the coating operation, as well.

Referring to Fig. 4 and the process described in detail in paragraphs [0035] through [0039], coating guns A, B, C, D are assigned to the respective locations 1, 3, 4, 2. Spray gun A is designated to coat only parts identified as coming from tool 1 and spray gun B is designated to coat only parts identified as coming from tool 3. If gun B becomes inoperative, gun A may be operated at twice the normal firing rate to coat parts 1 and 3, that is, by coating every second can rather than every fourth can. Method 2 described in paragraph [0038] shows how all parts may be coated when two guns become inoperative. This is accomplished by both shifting relative positions of the coating guns and operating them at twice the normal rate.

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Rejections under 35 U. S. C. Section 103.

Claims 1 and 2-7 have been rejected under 35 U. S. C. 103(a) as being unpatentable over Algeri et al (US 4060052) in view of Marion et al (US 4693376) and Giesinger et al (US 6063195). Algeri describes a high-speed manufacturing method for spray coating beverage cans. The battery cans are provided in a stream of parts, such as cans 83, 84 shown in Fig. 1. There is no identification as to different can sources and cans 83 and 84 simply feed in from a single rack of parts, sometimes missing an empty pocket which is sensed by a proximity sensor. Each can position is assigned a spray coating gun. The cans intermittently move as a group with a move time and a dwell time but are not identified other than by the presence of a can that triggers a spray gun. Claims 1 and 5 recite an ordered stream having a repeating sequential order, which is an essential element in the applicants' process and is not shown by the Algeri patent, despite the Examiner's assertion that Algeri shows a single ordered stream of parts having a repeating sequential order. Algeri provides for halting a spray gun in the absence of a part, but says nothing about what is to be done in the event of failure of a spray gun. That is the object of applicants' invention. See paragraphs [0008], [0009], [0010] and [0011].

Marion is cited to show that it is well known to provide an automatic inspection system to make sure that an applied coating is acceptable and that it is well known that cans may be made from drawn metal parts. These assertions are not disputed. However, when a coating is defective in Marion, an ejector mechanism is triggered to eject the defectively coated container. This process is repeated over and over with no corrective action being described in the patent. The faulty part is ejected, but the problem is not automatically corrected as it is in the applicants' process. There is no ordered stream nor an assignment of a coating gun to a source-identified part. Hence the combination of Algeri and Marion fall short of teaching or suggesting applicants' claimed process.

Giesinger teaches coating a single moving part with multiple spray guns stacked up so that each gun coats a different portion of the part. Giesinger is the only reference cited that

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addresses the possibility that one of the spray guns might not operate properly. This inoperative gun is detected not from an inspection of a single part to which that spray gun is assigned, but rather by monitoring the flow of powder through the gun. And what is the corrective action taken? The disclosed embodiment speaks of an alarm going off or interruption of the overall coating process. The only reference to corrective action to keep the process running is mentioned in a brief reference to an alternate embodiment (not shown) for a vertically movable additional gun.

One is left to speculate how this additional gun is mounted and manipulated or substituted for the defective spray gun. The addition of a superfluous spray gun is not required in the applicants' claimed process. The existing spray guns are operated or manipulated in an unobvious way (by firing at double rate or shifting position) so that they automatically and instantly continue to coat the parts and to maintain identification of the source of the parts vis-à-vis identifying which spray gun is coating a source-identified part. This maintains the integrity of the ordered stream from the source tool to the packing carton in a way not suggested by the references.

Regarding the limitation of dependent claim 3, the three combined references do not contemplate nor suggest conducting processing in a second spray gun at twice the normal processing rate.

Regarding the limitation of dependent claim 4, the three combined references do not contemplate shifting the position of a spray gun along the stream of parts, as well as operating a spray gun at twice the normal processing rate.

Regarding the limitation of claim 5 of shutting down coating guns that are producing defective coatings, the three combined references do not appear to address the problem of inoperative spray guns producing defective parts other than by removal and installation of guns requiring replacement (or by a vague statement by Giesinger unsupported by any disclosure) so as to minimize the downtime associated with a malfunctioning processing system. Applicants' process continues to run and produce acceptable coated parts while a defective or inoperative

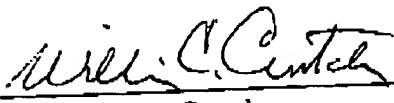
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coating gun is removed and replaced with a properly functioning coating gun.

While the Examiner states that Giesinger teaches that a second additional spray gun can replace a first spray gun to allow coating parts in the same sequential location, unfortunately Giesinger does not show how this is done. If the same location is used to replace one gun with another, the defective parts would continue to pile up as scrap parts in a high-speed operation, while this substitution was taking place. There is simply no teaching in Giesinger, which can be used to supply the deficiencies of the other two references. The three combined references do not suggest the applicants' solution but simply set up the problem, which is addressed and solved by the applicants. The three combined references do not suggest a solution to the problem other than to shut down the line and replace the defective spray gun.

Since the applicants have provided a new and unobvious result and have clearly defined the inventive process in a series of steps which is not shown in the combined references, reconsideration of the rejection of Claims 1 and 2-7 is respectfully requested and it is asked that the case be passed to issue.

Respectfully submitted,

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